UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,965	02/25/2004	Dan Aharoni	EMC-02-132CIP1	4123

24227   7590   01/06/2009
EMC CORPORATION
OFFICE OF THE GENERAL COUNSEL
176 SOUTH STREET
HOPKINTON, MA 01748

EXAMINER
PATEL, SHAMBHAVI K

ART UNIT	PAPER NUMBER
2128	

MAIL DATE	DELIVERY MODE
01/06/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)	
Office Action Summary	10/786,965	AHARONI ET AL.	
	Examiner	Art Unit	
	SHAMBHAVI PATEL	2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
   Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _12/19/08_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-14_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-14_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   A **request for continued examination** under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e),

was filed in this application after final rejection. Since this application is eligible for continued examination under

37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 19 December 2008 has been

entered.

2.   Claims 1-14 have been presented for examination.

Response to Arguments

3.   In view of Applicant's amendments, an amended 35 U.S.C. 112 rejection is issued below.

4.   Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new

grounds of rejection presented below.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the
> subject matter which the applicant regards as his invention.

5.   **Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite** for failing to

particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding

claims 1 and 8, the limitation "the back end comprising back end controllers coupled" is vague and indefinite. It is

unclear what the back end controllers are coupled to. All other claims are rejected by virtue of their dependency.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set

forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art
> are such that the subject matter as a whole would have been obvious at the time the invention was made to a
> person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be
> negatived by the manner in which the invention was made.

The factual inquiries set forth in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966), that are

applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as

follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35
U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time
any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the
obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly
owned at the time a later invention was made in order for the examiner to consider the applicability of 35
U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6.   Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Friedrich (US Patent No.

5,276,877) in view of Wilkes ("The HP AutoRaid Hierarchical Storage System").

Regarding claims 1 and 8:

Friedrich discloses a method of enabling a user to construct on a target data storage system the method

comprising the steps of:

a.   displaying a user interface to the user **(column 9 line 53-column 10 lines 19)**, the user

interface connected over a network **(figure 1)** to the target data storage system **(figure 1:**

entire system being simulated), the target data storage system comprising a plurality of

storage components **(figure 1: each of the CPUs being simulated, including their attached**

disks), and one or more source data storage systems, each of the one or more source data

storage systems comprising a plurality of storage components **(column 13 lines 28-35)**

b.   the interface including a selector to enable the user to select a data storage component for

inclusion in the target data storage system **(column 13 lines 28-35)**

c.   merging the one or more data storage components from the one or more source data storage

systems into the target data storage system, including obtaining configuration characteristics

and workload characteristics for the one or more data storage components from the one or

more source data storage systems **(column 14 lines 36-50)**

     d.   simulating performance of the target data storage system using one or more workloads to

           obtain utilization and performance information for each data storage component **(Fig. 3(a)**

           and 3(b); column 10 lines 8-20, 43-49; column 14 line 66-column 15 line 2; column 32

           line 43-column 33 line 14)

     e.   graphically representing the utilization or performance of teach of of the one or more data

           storage components of the one or more source data storage systems merged into the target

           storage system on the user interface to enable the user to visually determine whether the target

           data storage system meets a desired performance **(column 15 lines 3-30)**

    Friedrich discloses a computer having a memory and display **(column 2 lines 61-67)**

    Friedrich does not explicitly disclose a target and source data storage system, each comprising front end

controllers coupled to a cache memory and a back end coupled to the cache, the back end comprising back end

controllers coupled. **Wilkes teaches** data storage systems comprising front end controllers coupled to a cache

memory and a back end coupled to the cache, the back end comprising back end controllers coupled **(section 2.1 2nd**

paragraph) and optimization of the backend end of the storage system **(section 4.1 1st paragraph).** At the time of

the invention, it would have been obvious to one of ordinary skill in the art to combine the teachings of Friedrich

and Wilkes in order to develop a data storage system that is easy to use, is suitable for a wide variety of workloads,

and is largely insensitive to dynamic workload changes **(Wilkes: abstract).**

Regarding claims 2 and 9:

    Friedrich discloses obtaining the workload characteristics from a workload analyzer that analyzes the

workload characteristics of the associated data storage component when executing in the source storage system in

response to the one or more workloads **(column 14 lines 46-65).**

Regarding claims 3 and 10:

    Friedrich discloses inputting the workload characteristics by a user **(column 10 lines 21-33).**

Regarding claims 4 and 11:

     Friedrich discloses consolidating the source data storage system by constructing the target data storage system to include fewer data strorage components that the source data storage system **(column 14 lines 21-34).**

Regarding claims 5 and 12:

     Friedrich discloses data storage components in the target system that are of higher capacity than the source system **(column 26 line 53-column 27 line 21).**

Regarding claims 6 and 13:

     Friedrich discloses load balancing the system in accordance with simulation results **(column 11 lines 25-36).**

Regarding claim 7:

     Friedrich discloses indicating whether to consolidate a plurality of data storage components of the source system to fewer or newer storage components **(column 29 lines 48-59 displays devices that may be removed).**

Regarding claim 14:

     Friedrich discloses partially optimizing the system in accordance with the simulation results **(column 1 line 5-clumn 2 lines 49: analysis done to improve system).**

<div align="center">*__Conclusion__*</div>

7.   **Examiner's Remarks:** Examiner has cited particular columns and line numbers in the references applied

to the claims above for the convenience of the applicant. Although the specified citations are representative of the

teachings of the art and are applied to specific limitations within the individual claim, other passages and figures

may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the

references in their entirety as potentially teaching all or part of the claimed invention, as well as the context of the

passage as taught by the prior art or disclosed by the Examiner. In the case of amending the claimed invention,

Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied

on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

10.   Any inquiry concerning this communication or earlier communications from the examiner should be

directed to Shambhavi Patel whose telephone number is (571) 272-5877. The examiner can normally be reached on

Monday-Friday, 8:00 am – 4:30 pm.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini Shah

can be reached on (571) 272-2279. The fax phone number for the organization where this application or proceeding

is assigned is (571) 273-8300.

        Information regarding the status of an application may be obtained from the Patent Application Information

Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR

or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more

information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the

Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SKP

/Hugh Jones/

Primary Examiner, Art Unit 2128